UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/945,339	08/31/2001	Edmund K. Waller	05010.0087U1	1418

23859 7590 06/09/2006

NEEDLE & ROSENBERG, P.C.
SUITE 1000
999 PEACHTREE STREET
ATLANTA, GA 30309-3915

EXAMINER
BELYAVSKYI, MICHAIL A

ART UNIT	PAPER NUMBER
1644	

DATE MAILED: 06/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/945,339
Filing Date: August 31, 2001
Appellant(s): WALLER ET AL.

Robert A Hodges
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 04/18/06 appealing from the Office action mailed 10/02/03.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences Identified.

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the Brief.

3) Status of Claims.

The statement of the status of claims contained in the Brief is correct.

(4) Status of Amendments After Final.

No amendment after final has been filed.

(5) Summary of Invention.

The summary of invention contained in the Brief is correct.

(6) Issues.

The appellant's statement of the issues in the Brief is correct.

(7) Grouping of Claims.

At page 3 of the Brief, Appellant asserts that "claims 1-20 stand or fall together"

Contrary to Appellant's assertion, only claims 1-6 and 15-20 are on appeal and stand or fall together.

(8) Claims Appendix

The copy of the appealed claims contained in the Appendix to the Brief is correct

(9) Prior art of record.

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal

1. Waller, US Patent 5,800539

2. Sykes et al., WO 99/25367

(10) Grounds of Rejection.

The following ground of rejections is applicable to the appealed claims.

Rejection Under 35 U.S.C. § 103

Claims 1-6 and 15 –20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waller (US Patent 5,800,539) in view of Sykes et al. (WO 99/25367).

Waller teaches a method of transplanting hematopoietic cells from a donor to genetically unrelated recipient that will inherently result in the enhancing immune reconstitution in the transplant recipient, comprising administering into the recipient in combination with the hematopoietic cells an amount of mononuclear cells, which are treated so to reduce their ability to cause graft versus host disease (GvHD) effect, but which are retain their ability to facilitate engraftment of the hematopoietic cells in the recipient and administering to the recipient an effective amount of hematopoietic cells. (see entire document, Abstract and Claim 1 in particular). Waller also teaches that mononuclear cells are T cells, or natural killer (NK) cells, or mixture of T cells and NK cells (overlapping column 3-4 and claims 2-4 in particular).

Waller also teaches that mononuclear cells are treated with chemotherapeutic drugs, including fludarabine (column 4, lines 66-67, column 5, lines 1-12 in particular). Waller teaches that said treatment sufficiently hinders the mononuclear cell proliferation such that they do not cause a lethal GvHD in the patient. However, Waller stressed that said treated T cell should be viable and that this is essential for successful engraftment of donor hematopoietic cells (see column 1, lines 45-60 and column 5 in particular). It is noted that the instant Specification also acknowledge that treated cells substantially reduces their proliferation ability. For example, on page 19, lines 15-20, it is explicitly stated that " The mononuclear cells are incubated with a sufficient concentration of the cytotoxic drug so as to substantially reduce their ability to cause GvHD. The sufficient concentration is that **which causes greater than 90 % inhibition of the proliferation of treated cells"** (emphasis added).

Waller do not explicitly teaches that said treated T cell retain their ability to proliferate in the recipient as recited in the instant claims.

Sykes et al., teach a method of transplanting hematopoietic cells from a donor to genetically unrelated recipient , comprising treatment of donor T cells (see entire document, page 5 lines 9-34 in particular) Sykes et al., teach that for successful transplantation of hematopoietic cells from donor to recipient , it is essential that after treatment T cells are not completely depleted, thus so called graft-verses leukemia (GvL) effects of the non-depleted T cells help engraftment of donor hematopoietic cells (see page 10, lines 17-23, page 11, line 5-25 in particular). Sykes et al., teach several treatment protocol, including treatment with fludarabine (page 14, line 5-16 in particular). Sykes et al., specifically stressed that said treatment should not completely eliminated T cells (page 16, lines 2-11 in particular). Therefore it would be obvious to one of ordinary skill in the art at the time the invention was made to deduce that said non-eliminated T cells would be able to retain their ability to proliferate in the recipient.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply the teaching of Sykes et al., to those of Waller to obtain a claimed method of transplanting hematopoietic cells from donor to recipient, comprising administering into the recipient in combination with the hematopoietic cells an amount of mononuclear cells, which are treated so as to reduce their ability to cause graft versus host disease effect while retain their ability to proliferate in the recipient and facilitate engraftment of the hematopoietic cells in the recipient.

One of ordinary skill in the art at the time the invention was made would have been motivated to do so, because one of ordinary skill in the art at the time the invention was made would deduce from the combined reference teaching that treatment of donor T cells in such a way as to retain not only their viability but also their ability to proliferate in the recipient, would be essential for successful engraftment of donor hematopoietic cells. Such treatment can be used in the method of transplantation hematopoietic cells taught by Walter.

From the combined teaching of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

(11) Response to Argument

Rejection Under 35 U.S.C. § 103

At page 4 of the Brief, Appellant assert that (i) the combination of Walter and Sykes does not disclosed or suggest all limitation of the instant claims; (ii) even if all the limitation were taught, the combination of Waller and Sykes is improper for the combination would change the principle of operation of Waller in that Waller disclosed the nonproliferation of T cells. Said principle of operation is crucial different from claimed method that require treated T cells to retain their ability to proliferate in the recipient.

Appellant further assets that Sykes does not disclosed or suggest that the cells have retained the ability to proliferate (see page 7 of the Brief).

On page 9 of the Brief, Appellant asserts that both Waller and Sykes use fludarabine treatment to reduce T cell population and it would not be obvious to one skill in the art to use fludarabine to result in T cell capable of proliferating.

Contrary to Appellant's assertion, it is noted that the main principle of operation of Waller is the ability of treated T cells to facilitate an engraftment of the hematopoietic cells in the recipient, while not inducing lethal GvHD (see column 4, lines 40-50 in particular). The crucial feature for operation of Waller is the viability of treated T cells. Waller explicitly stated that fludarabine treatment should sufficiently hinders the mononuclear cell proliferation but such that the mononuclear cells are effective in enhancing engraftment of the hematopoietic cells (see column 5, lines 25-35 in particular).). In other words, contrary to Appellant assertions, Waller et al., uses fludarabine treatment to prevent treated cells from causing GvHD not to reduce T cell population.

Similary, Sykes et al., teach a method of a myeloreductive non-myeloablative treatment with fludarabine, the same type of treatment as claimed invention. Sykes et al., teach that for successful transplantation of hematopoietic cells from donor to recipient , it is essential that after treatment T cells are not completely depleted, thus so called graft-verses leukemia (GvL) effects of the non-depleted T cells help engraftment of donor hematopoietic cells (see page 10, lines

17-23, page 11, line 5-25 in particular). Sykes et al., specifically stressed that said treatment should not completely eliminated T cells (page 16, lines 2-11 in particular). In other words, contrary to Appellant assertions, Sykes uses fludarabine treatment to prevent treated cells from causing GvHD not to reduce T cell population.

It is noted that the instant Specification clearly disclosed that the crucial feature of the invention is that treatment with fludarabine should limit the ability of T cells to cause GvHD while retaining **their viability** (see page 5, line 6-15 and page 27, lines 14-25 in particular). The instant Specification also acknowledge that said treatment would sufficiently **hinders the mononuclear cell proliferation.** For example, on page 19, lines 15-20, it is explicitly stated that " The mononuclear cells are incubated with a sufficient concentration of the cytotoxic drug so as to substantially reduce their ability to cause GvHD. The sufficient concentration is that which **causes greater than 90 % inhibition of the proliferation of treated cells"** (emphasis added).

Clearly one skill in the art would understand that treatment with fludarabine would sufficiently hinders the mononuclear cell proliferation . In other words, one skill in the art would understand that principle of operation in both prior art teaching and instant Specification is that treated cells substantially reduces their ability to cause GvHD while retaining their **viability** and their ability to facilitate engraftment of the hematopoietic cells.

Even Appellant's Specification corroborated said statement. Example I of the instant Specification explicitly disclosed that fludarabine treated cells have been checked only for **viability**. In addition, the Specification further disclosed that said treated cells substantially reduces their ability to be induced to proliferate by alloantigen *in vitro* experiments. In other words there is no any evidences in the specification that claimed retained ability of treated mononuclear cells to proliferate in the recipient has been ever check. Moreover, it is noted that both Waller et al., and the instant Specification uses similar concentrations of cytotoxic chemotherapeutic drugs to treat mononuclear cells and administered similar amount of treated mononuclear cells to facilitate engraftment of transplanting hematopoietic cells (see column 5 lines 1-65 of Waller et al., and Example 1 of the instant Specification). Thus, it is clear that

both the prior art and the instant claims administered the same treatment to the same patients to achieve the same results. Appellant is relying upon an asserted and claimed mechanism of action of fludarabine (T cells retained ability to proliferate after treatment with fludarabine), but does not appear to distinguish the prior art teaching the same method to achieve the same endpoint. Mere recognition of latent properties in the prior art does not render nonobvious an otherwise known invention. When the prior art method is the same as a method described in the specification, it can be assumed the method will obviously perform the claimed process absent a showing of unobvious property. In re Wiseman, 201 USPQ 658 (CCPA 1979). Granting a patent on the discovery of an unknown but inherent function would remove from the public that which is in the public domain by virtue of its inclusion in, or obviousness from, the prior art. In re Baxter Travenol Labs, 21 USPQ2d 1281 (Fed. Cir. 1991). See M.P.E.P. 2145.

(12) For the above reasons, it is believed that the rejections should be sustained.

Respectively submitted,

Michail Belyavskyi, Ph.D
Art Unit 1644
July 14, 2004

Conferees

Christina Chan
SPE, Art Unit 1644

Long Le
SPE, Art Unit 1641